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NOTES ON CHRYSOMELID BEETLES OF THE SUBFAMILY CHLAMISINAE, WITH DESCRIPTIONS OF NEW SPECIES

By F. Monrós

Among some chrysomelid beetles of the subfamily Chlamisinae that I received for study from the United States National Museum are several of considerable interest, and these, together with notes on certain others of the same group received from other sources, form the subject of the present paper. I wish to express my thanks to Mrs. Doris H. Blake, who facilitated my borrowing material from the United States National Museum, and to the authorities of the National University of Tucumán, Argentina, for permission to publish the result of my researches.

One new species is added to the hitherto known forms of the genus *Melittochlamys*. The status of the known species of this genus is set forth in the key.

KEY TO THE SPECIES OF MELITTOCHLAMYS MONRÓS. 1948

- 2. Each elytron with 3 well-defined, depressed, velvety black spots; elytral surface rugose; dark cupreous-gray, moderately shining; antennae and legs yellowish brown (Brazil; Paraguay)_______ specula (Klug) Elytra without velvety spots or with only one spot each_______ 3
- 3. Pronotum, on each side of posterior lobe with a small triangular area, smooth and metallic shining; rest of surface of body cupreous, not shining; antennae reddish, tarsi yellowish brown; small subglobose species with moderately developed rugosities (Brazil) ________ semen (Lacordaire)

 Whole pronotal surface of same nature, without brilliant areas at basal lobe.

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4. Each elytron with a well-defined black velvety spot, which occupies a more or less depressed area_____ Elytra without well-defined velvety spots; sometimes with colors that change when viewed from different angles_____ 5. Dorsally slaty blue; head, antennae, and legs yellowish; each elytron with an elliptical basal velvety black spot; suture apparently without teeth (teeth visible only on open elytra) (Mexico)_____ pavonina (Lacordaire) Dorsally grayish, not or very little shining and darker than in preceding species____ 6. Discal area of elytra with deep fovealike punctures; each elytron with an anterior elliptical velvety area; underside and legs (except tarsi, which are yellow), black (southern Brazil) _____ achardi Monrós Discal punctures of elytra not deeper than elsewhere; deeper punctures appear only in velvety spots_____ 7. Elytral suture with small teeth; legs black, tarsi yellowish (Brazil). sericans (Lacordaire) Elytral suture without teeth; legs yellowish brown_____ exsula Monrós 8. Underside, head, and legs ferrugineous; thorax slaty gray, opaque; basal half of elytra blackish, apical half bluish and shining (Panama) (no specimens seen)_____ godmani (Jacoby) Ventrally and dorsally of same color; legs and head sometimes yellowish____ 9 9. Suture toothed. Head slaty gray like rest of body; antennae and legs orange-vellow. Each elytron near suture and in middle of its length with a short and feeble shining transverse ridge (Brazil)____ nicki Monrós 10. Head unicolorous, cupreous greenish, like rest of body; antennae and tarsi yellowish brown (Brazil, Mexico?)____hydropica (Lacordaire) Head bicolorous; ventral half yellow; rest of body obscure ______ 11 11. Legs entirely yellow; rest of body unicolor slaty bluish, moderately shining (Mexico) amoena (Lacordaire)

MELITTOCHLAMYS FREYI, new species

Only the tarsi orange-yellow. Rest of body leaden gray with moderate violaceous sheen at sides. Elytra without shining transverse ridge (Costa Rica)_______freyi, new species

FIGURE 85, b

Very similar to M. nicki Monrós, 1948, from which it may be distinguished by having tibiae and femora of the same color as the rest of the body, by having the ventral half of the head dark brown, and by having different elytral sculpture.

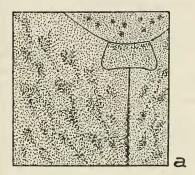
Pronotum.—Of semicircular form when seen from above, with its basal margin prolonged in a long posterior lobe, the top of which is not incised; regularly convex and without a central area that is distinctly separated from the laterals; seen from the side, the notal profile regularly arched; pronotal surface finely shagreened and with a few small circular superficial punctures, denser in the posterior lobe.

Scutellum.—Rectangular, its angles rounded, plain, and finely shagreened.

Elytra.—Apparent margins scarcely narrowed toward the apex, where they are broadly rounded; suture without teeth; the whole surface shagreened and with elongated punctures; scarcely developed

rugosities that are difficult to describe, all of similar height, may be seen over the whole surface.

Head.—Anterior and somewhat inferior; its surface plain and shagreened with large but not deep punctures in the clypeal region; antennae short and compact, distinctly saw-edged from the fourth joint.



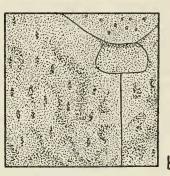


Figure 85.—Microsculpture of basal part of elytra in: a, Melittochlamys nicki Monrós; b, M. freyi, new species.

Prosternum.—Rectangular, relatively broad, its posterior margin nearly straight and the anterior margin with a transverse impression; rest of the inferior face and legs as in M. nicki. Pygidium moderately convex, shagreened, and covered with punctures, which are larger on the dorsal and more closely placed on the ventral half.

Color.—Lead gray, moderately shining; antennae (darker toward the apex), labrum, interocular space, ocular incisions, and tarsi orange-brown; viewed from certain angles, the pronotal and elytral margins appearing with a broad and moderately shining obscure violaceous reflection.

Measurements.—Holotype, female, length 3.2 mm., breadth 2.3 mm.

Type.—In the collection of G. Frey, Munich.

Distribution of material.—Turrialba, Costa Rica, 1 holotype, female, G. Frey collection.

Relationships.—This species may be distinguished from M. nicki by the above characters. From M. semen, with which it is closely allied in general shape and reduced length, it may be separated by the absence of the two metallic pronotal areas found in that species.

Named in honor of G. Frey, of Munich, who kindly sent me his Chlamisinae for study.

The CHLAMISUS HISPIDULUS group

Lacordaire, in reviewing the subfamily Chlamisinae, placed C. spinosus (Kollar), C. hirtus (Kollar), and C. hispidulus (Klug) in the

same group, which he distinguished by the presence of high, raised, conical, dorsal tubercles and the cupreous metallic color. In a footnote in the same revision, the author ¹ indicates the differences in the form of the antennae and tarsi of the three species, which he states are so closely allied otherwise that these differences must not be taken into account in the grouping of the *Chlamisus* species.

However, study of the three above-mentioned species shows that they are only apparently related to each other. I believe, for example, that *C. hirtus* is worthy of a separate genus or subgenus based on the following characters: The pubescent dorsal surface; the form of the tarsal claws; and the shape of the male genitalia, which are different from those found in any other species of *Chlamisus*. The form of the male genitalia of *spinosus* is also very peculiar and not like that of any other species of the genus, and this seems sufficient reason to exclude that species also from relationship with *hispidulus*.

Chlamisus hispidulus, with its allied forms that are dealt with in this paper, approaches C. gibbosus, the genotype as designated by Jacoby,² and other North American species of Lacordaire's eleventh group. These species may be considered to belong to the typical group, although there must be a reduction in the heterogeneous species that now make up the genus.

Chlamisus hispidulus presents a number of closely allied forms that may be separated by the key. The systematic range of all these forms is not always clear, and some of them are perhaps no more than subspecies of different geographic distribution. Except for C. hispidulus llajtamaucanus, for which subspecific relationship can be established, it has seemed better to consider them all as different species, at least for the present.

KEY TO THE SPECIES OF THE CHLAMISUS HISPIDULUS GROUP

- 1. Pygidium shagreened; its surface subopaque, not more shining than rest of abdomen; pronotal and elytral tubercles obtuse; in former it is not possible to distinguish four conical spines; elytral tubercles more or less united and ridge-shaped, not like independent cones; length 3.8 mm., 2.6 mm. (southern Bolivia)______simillimus Monrós Pygidium smooth, with some superficial punctures, more shining than rest

¹ Lacordaire, Monographie des Colcoptères * * * , Phytophages, vol. 2, p. 697, 1848.

² Fauna of British India: Coleoptera, Chrysomelidae, vol. 2, p. 271, 1908.

3. Large (more than 5 mm. in length); pronotal tubercles conical and very acute, distinctly separated from each other; elytral tubercles also well developed (central Brazil)______erinaceus, new species Not so large (approximately 4 mm. in length), tubercles less developed____4

4. Longitudinal pronotal groove with fine longitudinal striolae, between which a few punctures can be seen with difficulty; elytral surface also with fine and dense striolae with indistinct punctures between them (central, northern, and eastern Argentina; Montevideo)____hispidulus hispidulus (Klug)

Longitudinal pronotal groove with deep and close punctures, between which there are some longitudinal fine striolae; elytral punctures very distinct; elytral surface shagreened, only the tubercles and irregularities covered with fine striolae (interior of Brazil)______insolitus, new species

CHLAMISUS SIMILLIMUS Monrós

Chlamisus simillimus Monrós, Acta Zool. Lilloana, vol. 6, p. 179, 1948.

This species is easy to identify because of its pygidium, which is of a different sculpture from that of all other species of this group. Only the holotype from Bolivia is known.

CHLAMISUS HISPIDULUS (Klug)

This species was described from Montevideo, and it is the only one of the genus so far known from Argentina, where it seems to be rather common and of wide distribution. The material studied enables me to separate it into two subspecies:

CHLAMISUS HISPIDULUS HISPIDULUS (Klug)

Chlamys hispidula Klug, Entomologische Monographieen, p. 86, 1824.—Lacordaire, Monographie des Coleoptères * * * Phytophages, vol. 2, p. 700, 1848.—Burmeister, Stett. Ent. Zeit., vol. 38, p. 61, 1877.

Chlamys cordovensis Jacoby, Proc. Zool. Soc. London, 1907, p. 158, pl. 14, fig. 7.

This subspecies is well described in Klug's, Lacordaire's, and Jacoby's works, and it does not seem necessary to repeat the description. The identity of Klug's and Jacoby's species is evident.

C. hispidulus hispidulus occurs in two colors: cupreous, most commonly, and metallic reddish (somewhat similar to some dull specimens of Fulcidax cupreus or F. violaceus); apparently more frequent in the northern part of the general area.

This subspecies inhabits the greater part of central and northern Argentina from Baradero in the south (examples cited by Burmeister) to Jujuy and Misiones in the north. Toward the west it may be found in Córdoba, where it intergrades with the other subspecies, which inhabits dry areas.

CHLAMISUS HISPIDULUS LLAJTAMAUCANUS, new subspecies

This subspecies replaces *C. hispidulus hispidulus* in the dry parts of the western general area of the species, and the specimens that may be considered as more typical *llajtamaucanus* (corresponding to those from La Rioja and Santiago del Estero) could easily be regarded as

specifically different from *C. hispidulus*. However, there are other specimens (principally from Córdoba) in which the differences are less marked and which point to a merely geographical differentiation. I describe here the maximum difference from *C. hispidulus hispidulus*, as observed in specimens from Santiago del Estero.

Microsculpture formed by a fine shagreen with the striolae that are very distinct in *C. hispidulus hispidulus*, scarcely visible; color as in that subspecies, sometimes with more evident greenish metallic shining; on both sides of the median pronotal groove an elongated divergent raised area, surmounted by an obtuse edge, which is depressed in its middle. Each elytron moderately developed and not connected each with the other, with the following irregularities: A humeral callus and two basal tubercles, of which the external one is more developed; a small sutural tubercle near the scutellum; six tubercles arranged in two parallel oblique lines, three in each line, of which the sutural anterior is large and transverse and represents the highest elytral irregularity; three others on the external apical declivity arranged to form a triangle and but little developed.

Measurements.—Female, length 4.6 mm., breadth 3.2 mm.; very small male, length 3.6 mm., breadth 2.4 mm.

Type.—In the collection of F. Monrós, Tucumán, Argentina; paratype U.S.N.M. No. 59904.

Distribution of material and specimens examined.—Argentina: Llajta Mauca, Santiago del Estero, January 1944 (holotype in the Monrós collection, Tucumán); Rio Salado (1 paratype in the Bosq collection, Buenos Aires, Wagner collector; 1 paratype in the U. S. National Museum, Monrós collector); Añatuya, January 1944 (1 paratype in the Monrós collection, Tucumán); La Rioja (1 paratype in the Breyer collection, Museo Argentino de Ciencias Naturales, Buenos Aires); Mendoza (1 paratype in the Bruch collection, Museo Argentino de Ciencias Naturales, Buenos Aires); Córdoba (1 paratype in the Museo de Buenos Aires; 1 paratype in the Berg collection, Museo de La Plata; 1 paratype in the Narodni Museum, Prague, Staudinger collector; 1 paratype, same collection, Davis collector; 5 paratypes in the collection of the Deutsches Entomologisches Institut, Berlin, Stempelmann collector, identified as "C. hispidulus Klug"), Monte Cristo, December 1944 (2 paratypes in the Monrós collection, Tucumán).

Remarks.—An examination of the male genitalia reveals the complete identity of this subspecies with the C. hispidulus group.

CHLAMISUS INSOLITUS, new species

FIGURE 86

Similar to a small specimen of *C. hispidulus hispidulus* with well-developed tubercles; a little shorter and more compact than *C. hispi*-

dulus, of brighter color and with a somewhat yellowish golden metallic sheen; elytral and pronotal tubercles like those of that species, but more raised; general morphological characters identical with those of

C. hispidulus hispidulus.

The principal differences may be seen in the microsculpture of the dorsal surface: median pronotal groove covered with coarse and deep, somewhat elliptical punctures, which also appear on the external margin of the raised tubercles and toward the posterior angles, the whole surface with fine striolae like those of *C. hispidulus*, but not so distinct; elytral punctures deeper and larger than in *C. hispidulus* and the surface very finely shagreened; only the tubercles and irregularities with striolae, which converge toward their vertices.

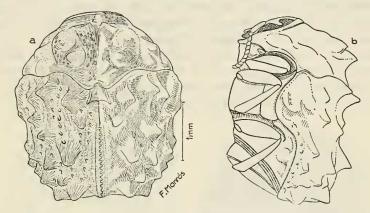


FIGURE 86.—Chlamisus insolitus, new species: a, Dorsal view, left side, showing microsculpture of the surface; right side, showing the irregularities of the body; b, lateral aspect.

Measurements.—Length 3.4 mm., breadth 2.5 mm.

Type.—U.S.N.M. No. 59905.

Distribution of material.—Rio Madeira, Porto Velho, Brazil. 1 holotype, male, Mann and Baker collectors, Mann collection in the U. S. National Museum, identified as "Chlamys hispidula Klug, F. C. Bowditch det. 1913."

Remarks.—I consider this species different from C. hispidulus, to which it is undoubtedly closely allied, principally because of the pronotal punctures and the elytral microsculpture. I have not seen a single specimen of C. hispidulus with this kind of deep and coarse punctation in the median groove.

CHLAMISUS ERINACEUS, new species

FIGURE 87

Large and with well-developed tubercles, somewhat like *C. spinosus*, its color like that of *C. hispidulus*, from which its morphological characters differ as follows: On each side of the median groove the

pronotum presents two conical and acutely raised tubercles, separated from each other; pronotal lateral callus developed into a short and obtuse tubercle; number and disposition of the elytral tubercles like that of *C. hispidulus*, but tubercles higher and more acute; some of them resemble small spines; first abdominal segment laterally with two tubercles more acute than the corresponding ones in *C. hispidulus hispidulus*.

Measurements.—Length 5.0 mm., diameter 3.8 mm.

Type.—In the collection of the Zoological Museum, Copenhagen, Denmark.

Distribution of material.—Brazil: Lagoa Santa (1 holotype female, Reinhardt collector, in the collection of the Zoological Museum, Copenhagen, identified as "hispidula Klug"); Rio de Janeiro (1 paratype female, Kraatz collector, in Deutsches Entomologisches Institut, Berlin, identified as "Chlamys sp., Bryant det.").

Remarks.—The present very peculiar species resembles an extraordinarily developed example of *C. hispidulus*, but since I have not seen forms transitional between these species, I prefer to consider it a separate entity, at least for the time being.

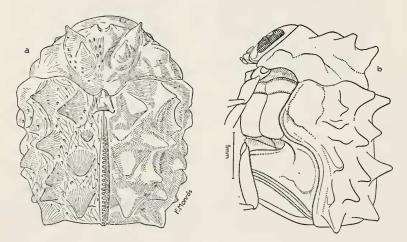


Figure 87.—Chlamisus erinaceus, new species: a, Dorsal view, left side, showing microsculpture of the surface; right side, showing the irregularities of the body; b, lateral aspect.

The United States National Museum collections contain the following new members of the Chlamisinae:

CHLAMISUS ROGAGUANUS, new species

FIGURE 88

A minute species, belonging to Lacordaire's eighteenth group, of nearly uniform toast-yellow color and without well-developed differential characters. Pronotum.—Of triangular shape, viewed from above, with its vertex broadly rounded; central raised area hemispherical, with a longitudinal low and broad groove, limited on both sides by an almost indistinct ridge; seen from this side the notal profile nearly semicircular, with its most elevated portion somewhat corroded; its surface covered with relatively deep circular punctures, deeper and more confluent in the raised central portion so that the surface seems to be somewhat corroded.

Scutellum.—Minute, somewhat concave, shagreened.

Elytra.—Narrower than the abdomen, which is partly visible laterally; basal margin with minute teeth, the sutural margin feebly toothed in the posterior half and without teeth in the anterior half; elytral surface covered with fine, confused, circular punctures and with the ridges which are peculiar to this group of species arranged as shown in figure 88, a, and feebly developed.

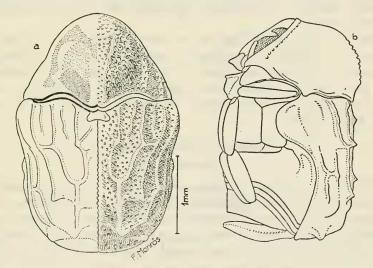


FIGURE 88.—Chlamisus rogaguanus, new species: a, Dorsal view, left side, indicating color pattern, right side, showing microsculpture and irregularities; b, lateral aspect.

Head.—Plain, covered with large but feebly impressed punctures uniformly dense over the whole surface; antennae with second and third joints short and opposite each other, distinctly saw-edged from the fourth joint.

Prosternum.—Rectangularly transverse on the anterior half, with a laminar prolongation in the posterior half; anterior margin somewhat concave.

Legs.—Moderately long and slender; the last tarsal joint raised one-half above the lobes of the third.

Abdomen.—Sides of the first visible segment without lateral tubercle; pygidium feebly convex, superficially corroded and with traces of a

median longitudinal ridge, which is not continuous in its whole length.

Color.—Bright toast-yellowish, darker on the dorsal face; head with a minute and ill-defined black interocular spot; middle of the ventral part of metathorax and abdomen black; posterior femora with a dark median ring on the middle; posterior margin of pronotum and anterior margin of elytra and scutellum with a narrow black margin; pronotum on each side of the central raised area with a basal brownish red oblong spot and another of the same color but brighter on the top of the same; central raised area somewhat darker than the rest of the pronotum; posterior half of the longitudinal groove of the same toast yellow as the elytra and scutellum.

Measurements.—Length 3.6 mm.; breadth 2.4 mm.

Type.—U.S.N.M. No. 59906.

Distribution of material.—Rosario Lake, Rogagua, Bolivia, October 28 to November 9, 1922 (holotype male, W. M. Mann collector, Mulford Biological Expedition, 1921–1922, in the U. S. National Museum collection).

Remarks.—This small species has few peculiarities. It may be related to C. cribricollis, from which it can be separated by its smaller size and the different punctation of the pronotum. It corresponds to a group of very similar small species, mostly undescribed, which seem to inhabit southern Brazil, Paraguay, eastern Bolivia, and northern Argentina.

CHLAMISUS CRIBRICOLLIS, new species

FIGURE 89

Of the same group as *C. rogaguanus*, recognizable by the circular, very uniform, and moderately dense punctures of its pronotum, which tend to form regular rows in the median posterior part of the pronotum.

Pronotum.—Seen from above its shape is triangular, broadly rounded at the apex; central raised area hemispherical, scarcely grooved longitudinally in the middle; seen from the side the notal profile stoutly conical, very little corroded on the top; the whole pronotal surface covered with small circular punctures, all of a uniform size and separated from each other by distances equal to their diameters; in the middle of the pronotum, these punctures with a tendency to form longitudinal rows, four or five of which are distinct.

Scutellum.—Flat and smooth.

Elytra.—Somewhat narrower than the abdomen, the sides of which are partly visible posteriorly; basal margin finely toothed on its internal half; the sutural margin toothed on the posterior two-thirds; in the example at hand the suture not closing perfectly behind the scutellum and a long and narrow triangular portion of the metanotum visible between the elytra. Elytral irregularities feebly developed, arranged as is common in this group of species and indicated in figure

89, a. Between the elytral irregularities, small and superficial circular punctures, which are more distinct because of their dark bottom, the punctures not confluent in any part of the elytral surface.

Head.—Flat, covered with large and superficial punctures, which are more apparent on the posterior half; antenna with second and third joints minute and opposed at the apex; distinctly saw-edged from the fourth joint.

Prosternum.—Funnel shaped, with a transversal constriction behind the anterior margin.

Legs.—Moderately long and robust; the last tarsal joint rises half its length above the lobes of the third.

Abdomen.—Sides of the first visible segment without lateral tubercle; pygidium feebly convex, the surface flat and uniformly covered with circular punctures of the same form as those covering the rest of the abdomen; in the holotype female the abdomen greatly distended and the genital apparatus partly visible.

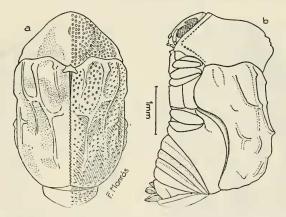


FIGURE 89.—Chlamisus cribricollis, new species: a, Dorsal view, left side, indicating color pattern; right side, showing microsculpture and irregularities; b, lateral aspect.

Color.—Dirty yellow with the median part of the metathorax black; all the tibiae with an ill-defined dark ring occupying the central third; in the center of the pronotum a black punctiform spot; rest of the dorsal face with ill-defined dirty-brown spots, arranged approximately as indicated in figure 89, a, and extending over the greater part of the dorsal face.

Measurements.-Length, 4.1 mm.; diameter, 2.5 mm.

Type.—U.S.N.M. No. 59007.

Distribution of material.—Río Beni, Cavinas, Bolivia, February 1922 (1 holotype female, William M. Mann collector, Mulford Biological Expedition, 1921–1922, in the U. S. National Museum collection).

Remarks.—This species may be separated from all its allies in Lacordaire's eighteenth group by the very uniform pronotal punctures, which show a tendency to form longitudinal rows on the posterior central part of the pronotum. The little pronotal black spot and the distribution of the dorsal coloration may help in its identification.

CHLAMISUS YAGUAR, new species

FIGURE 90

A small species belonging to the same group as *C. rogaguanus* and *C. cribricollis*; yellow with many well-defined black spots.

Pronotum.—Seen from above, of triangular shape with the apex broadly rounded; central area hemispherical, not grooved longitudinally and somewhat corroded, owing to the presence of small but deep confluent punctures, which do not occur on some irregular small raised vermicular areas; seen from the side, the notal profile semicircular, somewhat flattened on top.

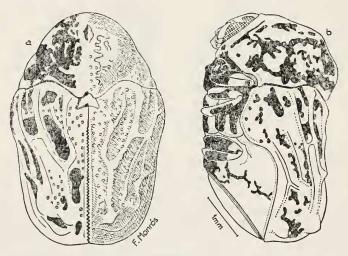


FIGURE 90.—Chlamisus yaguar, new species, holotype: a, Dorsal view, left side, indicating color pattern; right side, showing microsculpture and irregularities; b, lateral aspect.

Scutellum.—Flat and smooth.

Elytra.—Somewhat narrower than the abdomen, the sides of which are partly visible posteriorly; basal margin feebly toothed; the sutural margin toothed in the posterior four-fifths; each elytron with the usual irregularities of this group, arranged as may be seen in figure 90; between the ridges small nonconfluent circular punctures.

Head.—Flat, covered with large but not very deep punctures, uniformly dense over the whole surface; antennae moderately long, the second and third joints short and opposite to each other; distinctly saw-edged from the fourth joint.

Prosternum.—Anterior half of pentagonal shape, prolonged posteriorly into a narrow ridge between the coxae.

Legs.—Moderately long and robust; the last tarsal joint rising one-

third its length above the lobes of the third.

Abdomen.—Sides of the first visible segment without lateral tubercle; pygidium somewhat elongated and also corroded, with a complete feeble median longitudinal ridge.

Color.—Holotype: cinnamon-yellow, with irregular black spots arranged approximately as follows: Central part of metathorax and abdomen four small pygidial spots; a broad femoral ring on all legs; tibial spots occupying the apical third on all legs; a small spot on the base of each antenna; pronotum and elytra with irregular spots, arranged as may be seen in figure 90 and not symmetrical on both sides of the body. Paratype: a rusty orange and the black spots (especially those on the pronotum) much reduced.

Measurements.—Holotype length 3.4 mm., breadth 2.3 mm.; para-

type length 3.5 mm., breadth 2.3 mm.

Type.—In the collection of the Deutsches Entomologisches Institut, Berlin; paratype in the U. S. National Museum, U.S.N.M. No. 59908.

Distribution of material.—Paraguay: San Bernardino (1 holotype, Fiebrig collector, in the collection of the Deutsches Entomologisches Institut, Berlin); Sapucay, February (1 paratype, T. E. Foster collector, in the U. S. National Museum collection).

Remarks.—This species belongs to Lacordaire's eighteenth group and may be recognized easily by its peculiar coloration taken in conjunction with the prosternal shape.